

Notes from the 05/30/06 MI BPM Upgrade Meeting  
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These notes can be found in Beams docDB #1526.

Agenda as announced:

- Project Announcements
- Main Injector Status - Dave C.
- Hardware status:
  - Transition Board: delivery, checkout and testing.
  - Transition Board controller status
  - Timing Board
  - Cables, crates, backplanes, other.
- Software status:
  - Front-end software
  - Online software
- Status of full system tests - Bill Haynes
- Installation and Commissioning - Bob Dysert
- Validation
- AOB

## 0. Project Announcements

- None this week.

## 1. Main Injector Status - Dave

- The machine is coming up. Beam has been accelerated to 120 and 150 GeV. Most modes have been run. Waiting for downstream machines so that beam can be delivered. Some protons have been delivered to pbar, Recycler. Scheduled to deliver beam to the Tevatron later this week.

## 2. MI40 problems

- Last week problems were discovered in the MI40 prototype system. This system was installed and tested before the shutdown and was at that time working. 11 BPMs are connected to the prototype system. A meeting was held at 10:30 on Friday morning in the control room to discuss the problem and to plan to solve it.

- At the time of the MI BPM meeting the problem was not understood. Lots of theories and many questions. Bill Haynes, Steve Foulkes and others are actively working on the problem. The problem affects closed orbit measurements, is intermittent, but is serious enough that we need to understand it and solve it before we can move forward.

- One question in particular needs to be answered. Why did the system work before the shutdown but not after? What changed? Is it possible to roll back (H/W, firmware and S/W) to the version used before the shutdown?

- A dedicated effort to resolve this problem has very high priority at this time.

### 3. Hardware status:

- Transition Board: delivery, checkout and testing.

- Transition Board controller status

- Timing Board

- Cables, crates, backplanes, other.

- Transition Module Testing (Manfred, Tim, Rick Mahlum, Andrea)

- The testing began last week and immediately failures were seen at a very high rate. This was not and is not a happy situation. Up to Tuesday morning 22 boards have been tested (and repaired in some cases) and 10 boards are now working and available for the integration testing. Of the 10 boards that are working only 4 worked without any repairs. The problems are primarily, if not exclusively, bad solder joints.

- The plan is to test and repair boards as quickly as possible. In addition, Peter suggested that the boards be pretty thoroughly "burned in" or "shaked and baked" before they are installed in the service buildings. Lots of discussion of heating/cooling cycles, how many, how long to test the boards on the test stand, how much shaking, etc. needs to be done to try to catch all of the bad solder joints and any other problems without actually destroying the boards.

- There was some discussion of how to get the board assembly house (LACE) involved. There is no easy way for them to test the boards so we are not pursuing that avenue at this time.

- Transition Board Control Module - Stefano

- Stefano's slides can be found in beams-doc-1526.

- The boards are reaching final assembly and testing phase.

- The power cable, harnesses and fuses have been designed and at least one has been assembled and will be tested. See the photos in Stefano's slides for some of the details.

### 4. Software status:

- Front-end software

- Online software

- Brian is working on the system needed to reboot crates using D31.

5. Status of full system tests - Bill Haynes

Installation and Commissioning - Bob Dysert

- Full system tests are on hold until the MI40 problem is resolved. Installation and commissioning is on hold until the MI40 problem is resolved and the transition boards are tested and working and the full system tests are finished.

6. AOB

- Dave mentioned that the plan to remove all of BPM and BLM in a building at the same time is an operational issue for the MI operation.